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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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ABARRA

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EXAMINER

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ART UNIT

PAPER NUMBER

1773

DATE MAILED:

03/30/01

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/425,788

Applicant(s)

Abarra et al.

Examiner

H. Rickman

Group Art Unit

1773



- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1-18 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-18 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☒ received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of References Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2
- ☐ Interview Summary, PTO-413
- ☒ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 2, 4, 6, 8, 10, 14, 16, and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2, 4, 6, 14, 16, and 18 are rendered indefinite by use of the terms Fe, Ni, Co, Rh, Ru, or Ir "based" alloys." It is not clear from the specification what amount of the recited elements must be present to meet this limitation.

Claims 4, 6, 8, 10, 16, and 18 are rendered indefinite by the use of improper Markush terminology. The claims recite the limitation "selected from a group of...." It is unclear if this group is open to unrecited components. Is it suggested that Applicant amend the claims to recite, "selected from the group consisting of."

Regarding claims 2, 6, and 18, the phrase "including" renders the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

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Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-7 and 13-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Fontana, Jr. et al. (US 5701223).

Fontana, Jr. et al. disclose a spin valve magnetoresistive sensor having antiparallel pinned layers comprising a first Co magnetic layer, a non-magnetic Ru layer and a second Co magnetic layer disposed on the non-magnetic layer (Fig. 6). The reference teaches that the first magnetic layer is 30 Å thick and the Ru intermediate layer is 4 Å thick (Fig. 6). Fontana, Jr. et al. teaches that a seed layer can be formed underneath the first magnetic layer and on top of a non-magnetic substrate (col. 6, lines 19-21).

5. Claims 1-7 and 13-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawato et al. ("Spin valve films with synthetic ferrimagnetic (Co/Ru/Co) for pinned layers", Kawato et al., Central Research Lab, Hitachi Ltd. Pp. 113- 118).

Kawato et al. disclose a spin valve magnetoresistive sensor having antiparallel pinned layers comprising a first Co magnetic layer, a non-magnetic Ru layer and a second Co magnetic

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layer-disposed-on-the-non-magnetic-layer (Fig. 10). The reference teaches that the first magnetic layer is 3 nm thick and the Ru intermediate layer is 0.8 nm thick (Fig. 10). The reference also teaches that a Ta underlayer can be formed underneath the first magnetic layer (Fig. 10).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al. (US 5851643) in view of Bian et al. (US 6143388).

Honda et al. teaches a magnetic recording medium having a NiP coated Al substrate, an underlayer disposed thereon, a first magnetic layer, a non-magnetic intermediate layer, and a second magnetic layer. The reference teaches that the non-magnetic layer may be formed from Ru and the magnetic layers are formed from Co alloys which can include B (Fig 1a-1e; col. 5, lines 49-54; col. 8, lines 17-19; col. 9, lines 1-3). Honda et al. teaches that the first and second magnetic layers have antiparallel magnetizations (Fig. 7b; col. 19, lines 5-14). The reference fails to teach a non-magnetic intermediate layer formed from a CoCr alloy underlying the first magnetic layer.

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Bian et al. teaches the use of a CoCr alloy onset layer between a Co alloy containing B and an underlayer in a magnetic recording medium (see abstract). The reference teaches that a Co alloy onset layer promotes an in-plane c-axis orientation.

It would have been obvious to one of ordinary skill in the art at the time of invention to add a CoCrM alloy onset layer underneath the first magnetic layer taught by Honda et al. in order to promote in-plane c-axis orientation of the overlying magnetic layer.

8. Any inquiry concerning this communication should be directed to Examiner Rickman at telephone number (703) 305-2642.

H. Rickman



March 24, 2001



Paul Thibodeau
Supervisory Patent Examiner
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